December 11, 2001

Mr. Craig Jensen
Radiation Safety Officer
Battelle Memorial Institute
Columbus Operations
505 King Avenue
Columbus, Ohio 43201-2693

SUBJECT: NRC INSPECTION REPORT 07000008/2001-004(DNMS) - BATTELLE

Dear Mr. Jensen:

This refers to the routine safety inspection conducted at your facilities located at the Battelle Columbus Laboratories' West Jefferson Site, located at West Jefferson, Ohio on November 27 and 28, 2001. Areas examined during this inspection included physical security, follow up on previously-identified issues, and review of a reportable event involving an uncontrolled burn of a material within a hot cell which occurred on September 13, 2001. The burn event was addressed further in additional information provided to the NRC on December 6, 2001. Inspection findings were discussed with you on December 7, 2001.

No violations of NRC requirements or other items of concern were identified during this inspection.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. *ADAMS is accessible from* the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Bruce L. Jorgensen, Chief
Decommissioning Branch

Docket No. 07000008
License No. SNM-7

cc: R. Vandergrift, Ohio Department of Health

DOCUMENT NAME: G:\Sec\Battelle2001-004.wpd

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APPENDIX A

MATERIALS DECOMMISSIONING INSPECTION FIELD NOTES
FOR FACILITIES NEEDING SIGNIFICANT DECOMMISSIONING EFFORT
Region **III**

Inspection Report No.	**07000008/2001-004**
License No.	**SNM-7**
Docket No.	**070-00008**
Licensee (Name & Address)	**Battelle Memorial Institute** **Battelle Columbus Laboratories Decommissioning Project**
Licensee Contact	**Craig L. Jensen, Radiation Safety Officer**
Telephone No.	**(614) 424-5170**
Date of Last Inspection	**August 20-24, 2001**
Date of This Inspection	**November 27 and 28, 2001 with continuing NRC review through December 6, 2001**
Date of Next Inspection	**February-April 2002**

Type of Inspection: (X) Announced ( ) Unannounced
(X) Routine ( ) Special
( ) Initial Decomm. (X) Reinspection of Decomm.

Brief Description of Inspection Activities:

This was a routine decommissioning inspection to review the following:

1. Two violations identified during the August 2001 inspection (IP 88005 and 83822);
2. An open item concerning transportation identified during the August 2001 inspection (86740);
3. Security at the West Jefferson site in accordance with TI 2800/032; and
4. An unusual event which occurred on September 13, 2001.

Brief Description of Findings and Action:

All areas above were inspected in accordance with the appropriate inspection procedures. No violations of NRC requirements were identified.

Summary of Findings and Action:

(X) No violations cited, clear NRC Form 591 or regional letter issued
( ) Violation(s), clear NRC Form 591 issued
( ) Violation(s), regional letter issued
( ) Followup on previous violations

Inspector: ***RA by B. Jorgensen acting for/***__
Michael LaFranzo; Radiation Specialist

Date: _12/11/01_____

Approved: ***/RA/***_____
Bruce Jorgensen; Chief, Decommissioning Branch

Date: _12/11/01_____

[Field notes are to be used by the inspector to assist with the performance of the inspection. Note that all areas indicated in the field notes are not required to be addressed during each

inspection. However, for those areas not covered during the inspection, a notation ("Not Reviewed") should be made in each section where applicable. Additionally, all areas covered during the inspection should be documented in sufficient detail to describe what activities and/or records the inspector observed. The fieldnotes to the "Decommissioning Inspection Procedure for Materials Licensees" should be supplemented with: (1) the applicable inspection procedures for operating facilities provided in the Inspection Procedure (IP) 87100 series; and (2) other written documentation of the inspection, as necessary.]

1. SUMMARY OF DECOMMISSIONING STATUS

The checklist below is intended to provide, in a written outline format, summary documentation of the status of the licensee's facility in the decommissioning process. This documentation will be filed as part of the inspection report. The inspector should use this information to develop each inspection plan(s) for the various stages of decommissioning, namely, before dismantlement, during dismantlement and site remediation, and after site remediation.

A.	Licensee ceased operational program.	(X) Y ( ) N
B.	Required decommissioning financial assurance mechanisms in place.	(X) Y ( ) N
C.	Decommissioning Plan (DP) required.	(X) Y ( ) N
D.	Licensee final survey required.	(X) Y ( ) N
E.	NRC confirmatory survey required.	(X) Y ( ) N
F.	NRC closeout inspection required.	(X) Y ( ) N
G.	Licensee doing decommissioning planning and preparation before dismantlement.	(X) Y ( ) N
H.	Licensee actively remediating site.	(X) Y ( ) N
I.	Licensee completed site remediation.	( ) Y (X) N

Description of Facility Status:

The licensee continues to remediate its facilities. All the hot cells, except for the High Energy Cell have had all bulk radiological materials removed, and placed in the High Energy Cell.

2. INSPECTION OF KEY DECOMMISSIONING ACTIVITIES

The following is a generic checklist of major licensee activities occurring at various stages of decommissioning. From this generic checklist and from facility-specific activities you identify, develop the set of licensee activities to be inspected - for each individual inspection throughout the decommissioning process. Plan to inspect licensee activities that present potential high-risk conditions. Then apply the standard health and safety inspection areas in Section 3 of these fieldnotes (taken from the applicable 87100 series IP for the licensee's operational program) to the specific licensee decommissioning activities that are being inspected.

To complete the licensee activities checklist, the inspector will need to obtain information from the Licensing Project Manager, review the DP, make observations at the licensee's facility, review licensee records, take measurements and samples of contaminants, and undertake other investigative measures, to determine whether the licensee is meeting all regulatory and DP commitments for each decommissioning activity the licensee is performing.

A. LICENSEE ACTIVITIES INSPECTED BEFORE DISMANTLEMENT

1. Licensed material used during operations has been removed from site. ( ) Y (X) N
2. Facility license conditions are in place and met by licensee. (X) Y ( ) N

3. Site security and control of contaminated material being maintained in compliance with 10 CFR 20.1801 and 20.1802. (X) Y ( ) N

4. Support systems and services (e.g., lighting, water supply) are in place. (X) Y ( ) N
5. Decommissioning schedules are consistent with timeliness requirements in 10 CFR 30.36, 40.42, and 70.38. ( ) Y (X) NR
6. Licensee's recordkeeping is consistent with 10 CFR 30.35, 40.36, and 70.25. ( ) Y (X) NR
7. Financial assurance requirements are being maintained in accordance with 10 CFR 30.35, 40.36, and 70.25. ( ) Y (X) NR
8. Licensee is conducting site characterization in accordance with applicable radiation protection procedures. ( ) Y (X) NR
9. Construction of new site features (e.g., roads, rail spurs, staging areas, sediment control ponds) conforms to DP and does not compromise health and safety of workers and public. (X) Y ( ) N
10. Licensee activities conform to specific license conditions and licensee programs and procedures. (X)Y ( ) N
11. Other licensee activities: ( ) Y ( ) N

Basis for Findings:

The inspector observed the Licensee's 7:20 am morning meeting for Health Physics Technicians and Deconners, during which the daily decommissioning safety and radiation protection topics and issues were discussed. The inspector conducted a routine site survey of the buildings and grounds inside the licensee's fenced site and observed decommissioning work activities.

The licensee is planning remediation of chemical contamination of soil, using the process known as WIDE (Well Injection Depth Extraction). At this time, the licensee has acquired equipment for the project but is awaiting DOE documentation to complete its review. Thereafter, all appropriate documentation shall be sent to the NRC as part of an amendment to conduct the operations. The licensee believes that an amendment may be submitted to the NRC in early 2002. According to the RSO, no site work is being conducted regarding WIDE until the licensee receives appropriate approval from the NRC.

B. LICENSEE ACTIVITIES INSPECTED DURING DECONTAMINATION, DISMANTLEMENT, AND SITE REMEDIATION

1. Site security and control of contaminated material being maintained in compliance with 10 CFR Part 20. (X) Y ( ) N

2. Decontamination and dismantlement of structures are being performed consistent with DP and sound industry practice (structures include buildings, utilities, treatment lagoons, etc.). (X) Y ( ) N

3. Decontamination and remediation of the following are being performed consistent with DP and sound industry practice:
   a. Soil. ( ) Y ( ) N
   b. Sediment. ( ) Y ( ) N
   c. Surface waters. ( ) Y ( ) N
   d. Groundwater. ( ) Y ( ) N
   e. Other mediums: ( ) Y ( ) N

This area was not inspected during this inspection.

4. Licensee release and disposal of decommissioning wastes are consistent with DP and approved by NRC for:
   a. Liquid wastes (e.g., groundwater, surface water, liquid from treatment ponds, process liquids). ( ) Y ( ) N

b. Solid wastes (e.g., building materials, process and other facility equipment, concrete rubble, soil). ( ) Y ( ) N
c. Other wastes: ( ) Y ( ) N

This area was not inspected during this inspection.

5. Temporary, on-site storage of low-level radioactive wastes from decommissioning meets license conditions and guidance in IP 84890. ( ) Y ( ) N

This area was not inspected during this inspection.

6. Packaging and shipment of radioactive waste materials meet requirements in 40 CFR Parts 173-178 and 10 CFR Part 71. (X) Y ( ) N

On September 13, 2001, the NRC was notified that a fire had started while cutting open a berry can with a grinding wheel in the High Energy Cell. The fire flared up to a maximum of 8 inches and was extinguished in approximately 8 minutes. No radiological releases were identified as a result of the fire from the High Energy Cell. At the time, the licensee did not have adequate fire extinguishing equipment within the area; therefore the fire was allowed to burn out on its own accord. After further analysis, the licensee determined that the likely material ignited was zirconium. Based upon previous analysis, the licensee did not believe that a metallic fire was likely and had minimum fire protection equipment available in the area to fight such a fire. As a result of this event, the licensee determined that the fire protection system was inadequate and made the appropriate changes to mitigate future potential fire damage. The inspector noted that the licensee did not re-evaluate the potential explosive component. On December 6, 2001, the licensee provided information to the NRC concerning a potential explosion while cutting open berry cans. The licensee determined that ongoing work with the berry cans does not present a risk of explosion.

The event has been documented by NRC through two reports made by the licensee to the NRC operations center. The first report was made via telephone on September 13, 2001 and the second report was made via mail dated November 28, 2001. An email provided by the licensee concerning the licensee's explosive analysis is provided as an attachment to this inspection record.

No violations of NRC requirements were identified regarding the incident or subsequent follow up.

7. Restoration of site - Licensee has restored site to meet license conditions and NRC-approved plans. ( ) Y ( ) N

This area was not inspected during this inspection.

8. Licensee survey of material and equipment for free release sufficient to demonstrate compliance with release criteria.

This area was not inspected during this inspection.

Basis for Findings:

The inspector observed decommissioning activities during the inspection. See section 3.L. for further evaluation on transportation of licensed material.

C. LICENSEE ACTIVITIES INSPECTED AFTER COMPLETION OF SITE REMEDIATION

Basis for Findings:

This section is not applicable.

3. **INSPECTION OF STANDARD HEALTH AND SAFETY AREAS FROM THE OPERATIONAL INSPECTION PROGRAM**

Identify the standard inspection areas (from the inspection program of the licensee's operational program) to be covered during each decommissioning inspection. [Inspection areas A through L below correspond to the typical inspection areas in the 87100 series IPs that are applicable to decommissioning.] Then identify the new activities within the standard inspection areas undertaken by the licensee during decommissioning. Some of the new activities given below, as well as any other activities the inspector identifies, should be considered inspection items under the general set of health and safety inspection areas used in the applicable 87100 series IP.

Minimum inspection areas for the initial decommissioning inspection: decommissioning organization (A.1); decommissioning activities in compliance with NRC-approved DP (A.2); licensee procedures for implementing the DP (A.3); Radiation Safety Committee (RSC) and Radiation Safety Officer (RSO) responsibilities (A.4); and the licensee's decommissioning training program (E.1).

A. GENERAL OVERVIEW

1. Describe the licensee's decommissioning organizational structure:

The licensee's organization was as described in the Decommissioning Plan, which was tied down in Amendment 23. The RSO performs general over-sight of the radiation protection program, and ensures compliance with license conditions. The licensee's Radiological Technical Support Manager (who is also the Associate Radiation Safety Officer (ARSO)), and Radiological Field Operation Manager are responsible for the day-to-day radiation safety program.

2. Licensee is performing decommissioning activities in compliance with its approved DP. (X) Y ( ) N
3. Licensee has implemented procedures for the decommissioning activities identified in the DP. (X) Y ( ) N
4. The RSC and RSO fulfill license requirements to deal with all decommissioning activities. (X) Y ( ) N

Basis for Findings:

During the last inspection, two violations of NRC requirements were identified concerning this section. The violations were: 1. The failure to approve and document "field changes" by the RSO; and 2. The failure to limit radiological airborne worker exposure to RWP limits.

The inspector reviewed both issues while on site and determined that the licensee is currently in compliance with field changes and airborne RWP exposure limits. The inspector did not identify any further items of concern or violations regarding these areas during the inspection. Therefore, the NRC considers these violations closed.

B. FACILITIES

1. Describe, from field observation, the licensee-identified facilities and outdoor areas to be decommissioned:

This area is not significantly different from the past three inspections conducted in 2001.

2. The licensee's remediation plan includes all the contaminated facilities and areas on-site and off-site. ( ) Y (X) N

3. All essential systems and services (e.g., electrical power, water supply, communications systems) are in place and functional for the planned decommissioning activities (X) Y ( ) N

4. Licensee's emergency plan is in place and operative for the duration of decommissioning. ( ) Y ( ) N

This area was not reviewed during this inspection.

5. For complex sites needing site characterization,describe the key site characterization activities to be performed by the licensee to determine the nature and extent of contamination:

This area was not reviewed during this inspection.

6. Licensee's characterization activities performed in conformance with good industry practice. (X) Y ( ) N

C. EQUIPMENT AND INSTRUMENTATION

1. Survey instruments are applicable to contaminants of interest. ( ) Y ( ) N
2. Use of survey instruments appropriate for site. ( ) Y ( ) N

Basis for Findings:

This area was not reviewed during this inspection.

D. MATERIALS

1. Radioactive materials licensed during operations have been removed offsite; residual quantities conform to license conditions. ( ) Y ( ) N

This area not reviewed during this inspection.

2. Security and control of licensed materials, including contaminated areas, is being maintained. (X) Y ( ) N

Basis for Findings:

Security of licensed material was inspected in accordance with TI 2800-032. Licensed material was secured appropriately and in accordance with NRC requirements.

E. TRAINING

1. Licensee has developed training program for new decommissioning activities (e.g., demolition of structures, excavation of soil); program is adequate.( ) Y ( ) N
2. Training program being effectively implemented. ( ) Y ( ) N

Basis for Findings:

This area was not inspected during this inspection.

F. AREA RADIATION SURVEYS AND CONTAMINATION CONTROL

1. Area surveys are being performed in areas being decommissioned. (X) Y ( ) N
2. Where active remediation (e.g., demolition of structures, excavation of soil) is being performed, radiation levels in unrestricted areas do not exceed 2 mrem in any one hour. (X) Y ( ) N

Basis for Findings:

Surveys by the inspector did not identify any radiation levels or contamination above NRC requirements. For further information, see section 3.H. relating to radiation levels associated with waste movement and storage.

G. RADIATION PROTECTION

1. The licensee's approved health physics program is being implemented in the field for new decommissioning activities. (X) Y ( ) N
2. Site security and control of contaminated material are in compliance with 10 CFR 20.1801 and 20.1802. (X) Y ( ) N

H. RADIOACTIVE WASTE MANAGEMENT/EFFLUENTS/ENVIRONMENTAL MONITORING

1. Offsite disposal of decommissioning wastes conforms to free release criteria and disposal site requirements. ( ) Y ( ) N

This area was not reviewed during this inspection.

2. All new effluent releases conform to DP and applicable regulations. ( ) Y ( ) N

This area was not reviewed during this inspection.

3. The licensee's environmental monitoring program is being implemented in conformance with the DPand all applicable limits are being met. ( ) Y ( ) N

This area was not reviewed during this inspection.

4. Temporary storage/staging areas for radioactive wastes from building demolition, equipment dismantlement, soil excavation, etc., are adequately posted and protected. (X) Y ( ) N

Basis for Findings:

The continued movement of licensed material from JN1 is still causing elevated radiation levels around JN4 as a result of skyshine. The licensee is continuing to monitor radiation levels around JN4 to keep doses ALARA.

I. RECORDKEEPING FOR DECOMMISSIONING

1. Copies of the licensee's decommissioning cost estimates and funding methods are on file. ( ) Y ( ) N
2. Licensee has adequate records for decommissioning activities performed (e.g., for decontamination and dismantlement of structures; decontamination and remediation of soil, sediment, surface waters, groundwater; surveys of remediated facilities). ( ) Y ( ) N
3. Licensee's financial assurance conforms with the financial assurance requirements of NRC-approved possession limits and NRC regulations. ( ) Y ( ) N

Basis for Findings:

This area was not reviewed during the inspection.

J. TRANSPORTATION

1. Describe the licensee's program to package and ship decommissioning waste materials:

2. Licensee's program meets all applicable10 CFR and 49 CFR requirements for marking labeling, placarding, and shipping paper requirements for radioactive waste shipments. ( ) Y ( ) N

Basis for Findings:

The inspector followed up on a concern regarding a transportation issue identified during the last inspection. Specifically, the licensee did not possess characterization procedures concerning certain types of shipments of licensed material.

At this time, the licensee has a draft procedure that addresses the concerns identified during the last inspection. The procedure was reviewed by the inspector and apparently does address the concerns identified during the last inspection. The NRC will evaluate the licensee's transportation procedures once they are fully in place. The licensee estimates that it may take 1-2 months to complete the process.

At this time, the NRC considers this specific matter closed but will continue to monitor licensee compliance and documentation concerning transportation of licensed material.

K. POSTING AND LABELING

1. All contaminated areas, waste processing areas, and waste handling areas are posted in conformance with regulations. (X) Y ( ) N
2. Packaged radioactive waste materials are labeled in accordance with regulations. (X) Y ( ) N

Basis for Findings:

While reviewing some of the licensee's health physics practices, the inspector noted that posting and labeling were properly addressed in the areas inspected.

L. OCCUPATIONAL HEALTH AND SAFETY

1. Describe the occupational health and safety observations made at the licensee's facilities:

Safety shoes, glasses and helmets were required in areas inspected. All personnel working in these areas were provided with the appropriate equipment.

2. Licensee and Occupational Safety and Health Administration were informed of occupational health and safety issues observed during the inspection.

( ) Y (X) N

4. **VIOLATIONS, NON-CITED VIOLATIONS, FOLLOWUP ITEMS, AND OTHER ISSUES**

Briefly state (1) the requirements and (2) how and when the licensee violated the requirement. For non-cited violations, indicate why the violation was not cited. Briefly describe followup items and other issues.

No violations of NRC requirements were identified during this inspection.

END